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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,262	12/31/2003	Jin-Tae Oh	3364P161	8483
8791 7590 09/14/2007 BLAKELY SOKOLOFF TAYLOR & ZAFMAN 1279 OAKMEAD PARKWAY SUNNYVALE, CA 94085-4040			EXAMINER POWERS, WILLIAM S	
			ART UNIT 2134	PAPER NUMBER
			MAIL DATE 09/14/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/749,262

Applicant(s)

OH ET AL.

Examiner

William S. Powers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. Only US Patent Application No. 2003/0051043 has been considered. Copies of the other foreign patent documents and the non-patent literature references listed were not submitted to the Office. In addition, no dates were supplied for the NPL references.

Drawings

2. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated and as stated in the specification by describing fig. 1 as "a block diagram of a structure for a conventional pattern searching method" (specification, page 2, lines 11-12) and fig. 2 as "a diagram of a structure for the conventional pattern searching method" (specification, page 3, lines 13-14). See MPEP § 608.02(g).
3. Figure 3 is objected to because ref. 310 the term "usr" is used, but ref. 320 "user" is used.
4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

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number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 2, 4-7 and 9-11 are objected to because of the following informalities:
 - a. As to claim 2, the limitations, "the table information" in line 2 and "the corresponding table information" in lines 3-4, lack antecedent basis.
 - b. As to claim 4, Examiner assumes that packet header was the intended limitation for "packet head" in line 2.
 - c. As to claim 5, the limitations, "the corresponding table" in line 3 and "the corresponding pattern data" in line 4 and in line 5, lack antecedent basis.
 - d. As to claim 6, the limitations, "the last sequence" in line 2 and "the same position information", lack antecedent basis.

- e. As to claim 7, the limitations, "the corresponding pattern data" in lines 2-3, "the last sequence" in line 3 and "the last position" in line 5, lack antecedent basis.
- f. As to claim 9, the limitations, "the divided data pattern" in lines 6-7, "the corresponding data" in lines 8-9 and "the same pattern" in line 10, lack antecedent basis.
- g. As to claim 10, the limitation, "the corresponding pattern data" in lines 3-4, lacks antecedent basis.
- h. As to claim 11, the limitations, "the corresponding pattern data" in line 3 and "the corresponding data pattern" in line 5, lack antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 1, the term "input position sequence information" is not defined in the claim language. In addition, it implies that pattern data is inputted to the system, but there is no corresponding method step describing the inputting of pattern data.

As to claim 2, it is not clear from the claim language what is the difference between the first instance of the limitation "the pattern data" in lines 2-3 and the second instance of "the pattern data" in line 3. Does "the pattern data" refer to the same pattern data or are there two separate instances of pattern data? The divided parts of the pattern data are stored in claim 1, but there is no other instance of a different pattern data in the claims nor is there evidence that the pattern data is stored without dividing it. It is additionally unclear what is meant by "the pattern data having an input position next to the pattern data stored in the corresponding table information." Is the pattern ID information peculiar only to the pattern data in reference to the pattern data stored in the corresponding table information or is the pattern ID information peculiar to the pattern data in regards to all of the pattern data stored in the corresponding table information? For purposes of examination, the Examiner assumes that the pattern ID information is unique for each pattern data.

As to claim 3, the term "space information" is not defined in the claim language and is therefore deemed indefinite.

As to claim 4, it is not clear from the claim language if there is a difference between "the pattern data" of line 3 and the "divided parts of the pattern data" of line 4. It appears that a comparison is taking place, but it is unclear what is being compared. Is the pattern data being compared to itself or is "the packet data" of line 3.

As to claim 5, it is not clear what the difference is between "the corresponding pattern data" in line 5 and "the pattern data" in line 4 is. What is the corresponding table and is the pattern data stored in it different from "the pattern data" of line 4? Is "the pattern data" of line 4 stored in the corresponding table as suggested by the term "subsequent to"? It is additionally unclear what pattern data are multiplexed together and what results from this combination of separate digital (assumed) data streams and where is it stored.

As to claim 6, it is unclear what is meant by the term "the last sequence." Does "sequence" refer to the final part of the divided pattern data or is there a sequence of distinct sets of pattern data that are being stored? How is the position information defined? Is it an absolute or relative measure? Is there a difference between "pattern data" of line 2 and "the divided part of the pattern data" of line 3 or is the divided part a portion of the pattern data?

As to claim 7, it is not clear what is meant by "the last position" in the last line of the claim. Does "the last position" refer to the divided pattern data or the corresponding

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pattern data that is stored? It appears that the claim language is alluding to some kind of comparison or matching procedure involving the divided parts of the pattern data, but there is no method step that represents that implication in this claim or the base claim.

As to claim 8, the term "word connection information" in line 4 of the claim is not defined in the claim limitation and, as such, it is deemed indefinite.

As to claim 9, the use of the terms "pattern data", "input pattern data", "divided pattern" and "corresponding data" creates confusion. It is difficult to determine if "the divided data pattern" refers to the entries in the table information or if it refers to input data pattern that has been divided in step (a). Is the pattern data in the table information the same length as the divided data pattern? In addition, there appears to be a missing step. There is a reference to a "pattern data being constructed" in line 13 of the claim, but there is no previous method step that shows a limitation concerning the construction of a pattern data. Although it is not clear from the claim language, it is assumed that the divided data pattern is compared to entries of the table information of the same size.

As to claim 10, it is not clear if the limitation "packet ID information" in line 5 of the claim refers to "a packet ID" of line 3 or if it is a new limitation. There is no definition in the claim language or the specification to indicate what constitutes "packet ID information."

As to claim 11, it is rejected based on its dependency to a rejected base claim.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-11 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. The method steps of claims 1-11 the instant application merely recite the abstract manipulation of data. Pattern data is broken into parts and stored in a table. There appears to be some kind of searching being made in claims 9-11 for data patterns that are similar, but the searching stops when the data patterns being compared do not match. Nothing seems to happen to the pattern data that does not match anything in the table. The pattern data is not forwarded or flagged or dropped or further processed in any way.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 7,110,540 to Rajagopal et al. (hereinafter Rajagopal).

As to claim 1 as best understood, Rajagopal teaches:

- a. Dividing the pattern data into parts having a defined length or less (portioning the byte pattern into "substrings" equal to the shortest byte pattern) (Rajagopal, col. 2, lines 9-20).
- b. Extracting input position sequence information of each divided part of the pattern data (mismatch value) (Rajagopal, col. 2, lines 32-38).
- c. Assigning a characteristic packet ID to each divided part of the pattern data, and tabulating and storing the divided parts of the pattern data and the input position sequence information of the corresponding parts of the pattern data (keys are assigned to each substring) (Rajagopal, col. 2, lines 39-42).

As to claim 2 as best understood, Rajagopal teaches the table information includes pattern ID information peculiar to the pattern data having an input position next to the pattern data stored in the corresponding table information (each record in the hash table has unique identifications i.e. byte pattern, checksum,) (Rajagopal, col. 2, lines 32-38).

As to claim 3 as best understood, Rajagopal teaches space information of the corresponding pattern data is included to process meta characters (the spacing of the

substrings within the byte pattern are used to determine matches in the hash table) (Rajagopal, col. 3, lines 26-38).

As to claim 4 as best understood, Rajagopal teaches the step (c) includes determining information of a packet head as the characteristic packet ID when the pattern data is the first in the input position sequence among the divided parts of the pattern data (packet header is used to help classify and direct the byte pattern in the event of a match) (Rajagopal, col. 6, lines 54-65).

As to claim 5 as best understood, Rajagopal teaches the step (c) includes storing, in a separate table, and multiplexing the pattern data stored in the corresponding table, the input position sequence of the corresponding pattern data, or the pattern data subsequent to and different from the corresponding pattern data (combining substrings together to form the byte pattern which is stored in the hash table for future use in comparisons) (Rajagopal, col. 5, line 60-col. 6, line 15).

As to claim 6 as best understood, Rajagopal teaches the pattern data having the same divided part of the last sequence are stored to make the divided part of the pattern data of the last sequence have the same position information (position of the substring in the byte pattern) (Rajagopal, col. 2, lines 32-42).

As to claim 7 as best understood, Rajagopal teaches in the step (c), information representing that the corresponding pattern data is the pattern data of the last sequence is included in the input position sequence information when the divided part of the pattern data is at the last position (the search cycles through a scheme where the substring are compared to the shortest substring in the hash table then expands to longer substrings as long as a match as not occurred) (Rajagopal, col. 5, lines 19-59).

As to claim 8 as best understood, Rajagopal teaches the pattern data are stored in a hash table, and a hash value of each divided part of the pattern data, sequence information of the corresponding divided part of the pattern data and word connection information are stored (hash table with items corresponding to keys, mismatch value, checksum, byte pattern and a length value) (Rajagopal, col. 2, lines 32-42).

As to claim 9 as best understood, Rajagopal teaches:

- a. Dividing the input pattern data into parts having a defined length or less (portioning the byte pattern into "substrings" equal to the shortest byte pattern) (Rajagopal, col. 2, lines 9-20).
- b. Searching table information storing the same pattern data as the divided data pattern (searching for matches with byte sequences in a hash table) (Rajagopal, col. 4, lines 39-59).
- c. Extracting table input position sequence information of the corresponding data included in the table information storing the same pattern as the divided

parts of the data pattern searched of the divided data pattern (combining substrings together to form the byte pattern which is stored in the hash table for future use in comparisons) (Rajagopal, col. 5, line 60-col. 6, line 15).

d. Determining from the extracted table information whether the pattern data being constructed is the same as the input data pattern (combining substrings together to form the byte pattern which is stored in the hash table for future use in comparisons) (Rajagopal, col. 5, line 60-col. 6, line 15).

As to claim 10 as best understood, Rajagopal teaches:

- a. A packet ID representing an input position sequence of the corresponding pattern data (mismatch value) (Rajagopal, col. 2, lines 32-38).
- b. Packet ID information of pattern data subsequent to the input position of the corresponding pattern data (packet information includes checksum, mismatch value, byte pattern, length value) (Rajagopal, col. 2, 32-42).

As to claim 11 as best understood, Rajagopal teaches the step (b) includes stopping a search for pattern data connected to the corresponding pattern data when the input position information of the divided parts of the pattern data is different from the input position information of pattern data being the same as the corresponding data pattern (match is found when all the characters in the byte pattern are found in an entry in the hash table) (Rajagopal, col. 5, line 60-col.6, line 15).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William S. Powers whose telephone number is 751 272 8573. The examiner can normally be reached on m-f 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on 571 272 3811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


9/11/2007


KAMBIZ ZAND
SUPERVISORY PATENT EXAMINER

William S. Powers
Examiner
Art Unit 2134